

**REMARKS****Summary of the Office Action**

Claims 1-13 and 15 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Brune et al (WO 02/5305) (hereinafter "Brune").

Claim 14 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Brune.

Claims 16 and 24-27 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Brune in view of Kikuchi et al. (USPN 6,297,587) (hereinafter "Kikuchi").

Claims 17-23 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kikuchi in view of Sato (USPN 6,291,284) (hereinafter "Sato").

**Summary of the Response to the Office Action**

Applicants have amended claims 1, 3-6, 8, 17 and 22 to differently describe embodiments of the disclosure of the instant application and/or to improve the form of the claims. Applicants have canceled claim 2 without prejudice or disclaimer. Accordingly, claims 1 and 3-27 remain currently pending and under consideration.

**Rejections under 35 U.S.C. §§ 102(b) and 103(a)**

Claims 1-13 and 15 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Brune. Claim 14 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Brune. Claims 16 and 24-27 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Brune in view of Kikuchi. Claims 17-23 stand rejected under

35 U.S.C. § 103(a) as allegedly being unpatentable over Kikuchi in view of Sato. Applicants have amended claims 1, 3-6, 8, 17 and 22 to differently describe embodiments of the disclosure of the instant application and/or to improve the form of the claims. Applicants have canceled claim 2 without prejudice or disclaimer. To the extent that these rejections might be deemed to still apply to the claims as newly-amended, the rejections are respectfully traversed for at least the following reasons.

Applicants respectfully submit that Brune teaches an electron emitting device having parallel spaced-apart first conductors 10 near a substrate and with parallel spaced-apart second conductors 11 far from the substrate which intersect with each other, formed of a plurality of electron emitting elements which emit electrons from a side of the intersecting with parallel spaced-apart second conductors 11, where electrons are emitted, characterized in that the electron emitting elements 12 are independent and spaced apart, and in that the upper electrodes 11 extend across the space between the electron emitting elements 12. Applicants respectfully submit that Brune teaches an insulator layer made from dielectric material, wherein a part other than the island areas has a film thickness of 50 nm or greater.

However, Applicants respectfully submit that Brune does not teach at least the technical feature of newly-amended independent claim 1 of the instant application in that the bridging portion is provided with at least one through hole or notched portion. Although the Examiner asserts that Fig. 2 of Brune shows that the upper electrode 11 is provided with a notched portion corresponding to the bridge portion of the electrode that extends over electron emitting elements 12, Applicants respectfully submit that there is no hole or notched portion provided on any metal stripe 22 which is formed as a straight line. Therefore, Applicants respectfully submit that the device disclosed in Brune device is particularly different from the advantageous combination of

features of independent claim 1 of the present invention. For at least these reasons, Applicants respectfully traverse the Examiner's assertions with regard to Brune. Applicants note that the device disclosed in Brune involves a problem that the occurrence of a non-contact or a high electrical contact resistance is expected between the upper and lower A1 wire lines at intersections therebetween. See Fig. 1. Applicants respectfully submit that there is no such problem in the present invention because of the hole or notched portion of the upper electrode. Therefore, for at least the foregoing reasons, Applicants respectfully traverse the Examiner's assertions in these regards.

In addition, Applicants respectfully submit the Examiner's assertions with regard to Kikuchi are also unacceptable. The Examiner has asserted that Kikuchi teaches a carbon area comprising carbon or a mixture with carbon as a component or a carbon compound provided in the top, bottom, or middle of the island areas and also teaches that at col. 25, lines 49-52; "the resist layer 40 is used as an etching mask, an opening portion 15 is formed in the gate electrode 14 by a reactive ion etching method ... using chlorine base etching gas."

However, Applicants respectfully submit that Kikuchi does not teach at least the technical feature in that the a bridge forming step of forming a plurality of bridging portions provided with at least one through hole or notch along a line that separates the plurality of electron emitting elements by etching the upper electrode material layer. Applicants respectfully submit that Kikuchi states that "FIG. 2A shows a configuration of part of electrode layers (cathode electrode layers) 11 and gate electrodes 14 in the field emission display, FIG. 2B shows a configuration of the electrode layer (cathode electrode layer) 11 and the gate electrode 14 in one pixel, ...In FIG. 2B, the number of the field emission devices constituting one pixel is 64, while the above number shall not be limited thereto (col. 23, lines 39-48)." Namely 8x8 holes in

matrix of FIG. 2B imply opening portions 15 for the field emission devices. Applicants respectfully submit that this is because Kikuchi further states that the “emitter electrode 18 is surrounded by the opening portion 15 formed in the gate electrode 14.” See col. 23, line 67 through col. 24, line 4. Therefore, Applicants respectfully submit that the opening portion 15 formed in the gate electrode 14 does not imply any hole or notch formed on the bridging portions of the gate electrode 14. Applicants respectfully submit that Fig. 2A of Kikuchi does not show any hole or notch formed on the bridging portions of the gate electrode 14.

Applicants note that the bridging portion 15a is a portion of the upper electrode 15 extending across the plurality of electron emitting elements S the space as shown in Figs. 4 and 22 of the present application. Namely, Applicants respectfully submit that Kikuchi merely teaches performing the isotropic etching process for making opening portions 15 surrounding the emitter electrode 18 in the manufacture of the cathode field emission devices.

Next, the Examiner’s assertions with regard to Sato are respectfully traversed by Applicants. The Examiner has asserted that Sato teaches a method of the anisotropic etching. However, Applicants respectfully submit that Sato does not teach at least the technical feature in that a bridge forming step of forming a plurality of bridging portions provided with at least one through hole or notch along a line that separates the plurality of electron emitting elements by etching the upper electrode material layer.

Applicants respectfully submit that Sato merely describes the usage of anisotropic etching in the manufacture of the semiconductor device. Applicants respectfully assert that a person of ordinary skill in the associated art would not be led to modify the previous methodology by incorporating the methodology of Kikuchi or Sato with the device disclosed in

Brune, because those references do not teach, or even suggest, the use of a hole or notched portion in the bridging portion between the electron emitting elements.

Applicants respectfully submit that one having ordinary skill in the art would not be motivated to achieve the advantageous combinations of features described in each of the independent claims of the instant application based on the respective disclosures of the applied art of record, whether taken separately or in combination with each other.

Accordingly, Applicants respectfully assert that the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be withdrawn because Brune, Kikuchi nor Sato does not teach or suggest each feature of independent claims 1 or 17 of the instant application. As pointed out in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim." Thus, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. v. Union Oil Co. Of California, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987)." Similarly, MPEP § 2143.03 instructs that "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)."

Furthermore, Applicants respectfully assert that the dependent claims 3-16 and 18-27 are allowable at least because of their dependence from independent claim 1 or 17, and the reasons discussed previously.

### CONCLUSION

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this

response; the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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